

(54) **FOUR-PARTY CREDIT/DEBIT PAYMENT
PROTOCOL**

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12

(56) **References Cited**

U.S. PATENT DOCUMENTS

4,799,156 1/1989 Shavit et al. .
5,495,533 2/1996 Linehan et al. .
5,557,518 9/1996 Rosen .
5,621,797 4/1997 Rosen .
5,642,419 6/1997 Rosen .
5,671,279 * 9/1997 Elgamal 705/79
5,677,955 10/1997 Doggett et al. .
5,703,949 12/1997 Rosen .
5,715,314 * 2/1998 Payne et al. 705/78
5,724,424 * 3/1998 Gifford 705/79
5,757,917 5/1998 Rose et al. .
5,790,025 8/1998 Amer et al. .
5,790,677 8/1998 Fox et al. .
5,805,798 9/1998 Kearns et al. .
5,812,776 9/1998 Gifford .
5,822,737 * 10/1998 Ogram 705/26
5,825,881 10/1998 Colvin, Sr. .
5,826,242 10/1998 Montulli .
5,826,245 10/1998 Sandberg-Diment .
5,930,777 * 7/1999 Barber 705/40

5,974,146 * 10/1999 Randle et al. 380/24
5,991,750 * 11/1999 Watson 705/44
6,014,636 * 1/2000 Reeder 705/17
6,016,484 * 1/2000 Williams et al. 705/39
6,023,682 * 2/2000 Checchio 705/18
6,029,150 * 2/2000 Kravitz 705/39
6,049,785 * 4/2000 Gifford 705/39
6,058,381 * 5/2000 Nelson 705/40

FOREIGN PATENT DOCUMENTS

WO 95/16971 * 12/1994 (WO) .
WO 95/16971 * 6/1995 (WO) .

OTHER PUBLICATIONS

Anderson et al., "Description of Financial Agent Secured Transactions (FAST) Authentication," Financial Technology Consortium, Fourth Draft, Dec. 2, 1998.*

O'Mahony, Donal, Peirce, Michael and Tewari, Hitesh, Electronic Payment Systems, Artech House, Inc., Norwood, MA, 1997.*

Anderson et al. Description of Financial Agent Secured Transactions Authentication.*

O'Mahony et al. Electronic Payment Systems, Artech House, Inc., Norwood, Ma, 1997.*

Milt Anderson et al., "Description of Financial Agent Secured Transactions (FAST) Authentication," Financial Services Technology Consortium, Fourth Draft, Dec. 2, 1998.

* cited by examiner

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(57) **ABSTRACT**

A method, system, program, and method of doing business are disclosed for electronic commerce that includes the feature of a "thin" consumer's wallet by providing issuers with an active role in each payment. This is achieved by adding an issuer gateway and moving the credit/debit card authorization function from the merchant to the issuer. This enables an issuer to independently choose alternate authentication mechanisms without changing the acquirer gateway. It also results in a significant reduction in complexity, thereby improving the ease of implementation and overall performance.